

ANATOMY

PHYSIOLOGY

PHYSIOLOGY OF EXERCISE

HEALTH HABITS - HYGIENE

REMEDIALS

SPECIAL EXERCISES

COMMUNICABLE +  
PREVENTABLE DISEASES

HISTORY + PRINCIPLES OF P.E.

DEFINITIONS OF P.E.

PRINCIPLES OF EDUCATION

PSYCHOLOGY

SOCIOLOGY

ASSIGNMENTS

GYMNASTICS (THEORY)

MARCHING, BJORNSTEIN GYMNASTICS,  
GERMAN " "

FUNDAMENTAL " "

DEMONSTRATION TABLE



## Anatomy.

### Anatomical Position.

Standing, straight, palm facing front in front of body.

### Median plane.

Divides right half of body from the left.

Medial - nearer mid-line, lateral further away.

Proximal - nearer attached end of a limb.

Distal - further attached end of a limb.

Coronal - divided at rt.  $\perp$  to median plane.

### Bones.

Skeleton - bony framework of the body.

- framework for support.
- protect internal organs.
- allow movement.

### Divisions of skeleton.

1) Axial - backbone, skull, ribs, breast-bone.

2) Appendicular.

- rest of the skeleton - limbs, girdles connecting them to axial parts.

### Vertebral Column.

- chain of bones making backbone.
- bear weight of body.
- each segment - a vertebra - lowest are largest.

### Vertebra - 2 main parts.

1) body - weight-bearing part in front.

2) arch - attached to body behind.

arch - makes a canal for spinal cord.



### Arch has several processes (muscular)

1) spine

From each side <sup>2)</sup> a transverse process



Muscles pull on them, ligaments attached to them.

Transverse processes are attached to ribs in chest region.

Articular processes - allow vertebrae to fit together tightly.

Vertebral Column.

Cervical - neck - 7 vertebrae.

- small, movement is free, shock absorber.

Thoracic - chest - 12 vertebrae

- larger bodies,

- facets - smooth spots on side of the body of the transverse processes for the ribs.

Lumbar - small of the back - 5 vertebrae

- very large bodies.

24 movable vertebrae. - can move separately.

Sacrum - fusion of 5 vertebrae

- upper 3 - heavy to bear weight.

- lower 2 - taller & are small.

Coccyx - tip of vertebral column.

26 units to vertebral column.

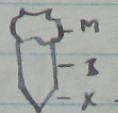
1st. vertebra - Atlas.

2nd " - Axis.

Articulation.

Thorax - sternum, 12 vertebrae, 12 ribs.

manubrium, body, xiphoid.





Edwards p. 5 - 14.

Bones -  $\frac{1}{3}$  organic matter (cells)

- toughness

$\frac{2}{3}$  inorganic matter (minerals)

- hardness.

2 parts - compact - outer part.

- cancellous - inner part.

- medullary cavity in long bones.

- contains 90% fat.

- red. b. c. manufactured there.

- periosteum - outer covering.

- except at cartilaginous bones.

Periosteum - vascular - lots of blood.

- attachment for ligaments & tendons.

- cartilage covers articular surfaces.

Long bones - femur

Flat " - broad surface for muscle attach.

- scapula

Short " - tarsus, carpus.

Irregular " - vertebrae.

Development of bones . 206 bones.

14 primary centres.

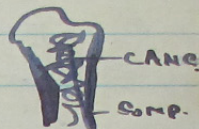
24 - skull - trunk

64 - upper extremity 62 - lower ext.

6 - ear bones - auditory ossicles.

All bones - supplied by arteries.

- nerve in periosteum.





## Scapula.

- back of thorax - 2 - 3<sup>rd</sup> rib.
- costal - ribs dorsal - back.

Dorsal - upper  $\frac{1}{3}$  above spine. convex.

- infraspinous fossa  
    infraspinatus muscle
- infraspinous fossa.  
    infraspinatus muscle

Costal - concave

- subscapularis muscle
- medial border  
    serratus anterior

Borders - superior

    medial, ventral

    lateral, axillary.

Superior - levator Anguli Scapulae.

Anterior - some len.

- Medial - rhomboid minor.  
    at above of spine.
- rhomboid major.  
    rest of border.

Axillary - tubes minor (upper  $\frac{2}{3}$ ) (gromm.)

- Lateral - tubes major.
- triceps

infraglenoid tuberosity. (long)

Three angles - medial

    infrar

    lateral - glenoid cavity.



Skull - 2 parts.

1) base

2) vault

Cranial - brain

Facial - face.

Base - uneven surface.

- long & oval in shape.

- broad behind.

- narrow in front.

- on inferior surface, 2 rounded articular processes

- Foramen magnum - hole for spinal cord

- Occipital bone - 1 - behind & below.

Parietal - 2 - sides.

Frontal - 1 - in front.

8 Sphenoid bone - 2. & l. 2.

Temporal bone - over temple 2 & l. in front of S. 2

Temporal foramen - attaches temporalis major.

Fora - organs of sight, smell, opening of alimentary & respiratory tracts.

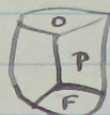
Nasal Ants Sept.

Eye Orbits

Upper Jaw. 1) Upper maxilla.

Cancellous bone - open

Hard Palette - floor of nasal cavity & roof of mouth.



Curves of vertebral column.

Before birth - one smooth curve  $\frac{Ac}{F_5}$  Foetus.

Adult -

- cervical x

x curve backwards.

thoracic

lumbal

sacral x

Cervical curve changes when child at 3 mo. lifts head. lumbal curve in 2nd year when he stands up & walks.

These called secondary curves, develop secondly 7



to primary curves.

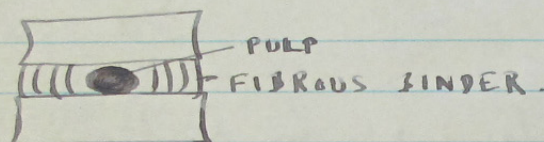
Immaturity make primary curves persist.

Sacral vertebrae fuse together.

### Intervertebral discs.

Between vertebrae - between bodies of vertebrae.

- act as shock absorbers & allow movement.
- are fibrous cartilage to hold vertebrae together.
- inside some pulp under pressure.
- acts as shock absorber.



### The Thoracic Cage - framework.

- consists of thoracic vertebrae & discs behind. (12)
- in front, the breastbone & sternum. protects front of chest.
- side. ribs - connect vertebral column behind with sternum <sup>in front</sup> behind. 12 pairs.
- each ends in front as a costal cartilage (gristle - allows movement.)

First 7 ribs have costal cartilage connected directly with sternum - true ribs.

8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> - cartilages each go to one above.

11<sup>th</sup> & 12<sup>th</sup> - have free tips - floating ribs.

### Skull - skeleton of head.

- joined on vertebral column.

2 parts. 1) Cranium - encloses brain box.

2) Facial part - bones of the face.  
- anterior lower part of skull.

Occiput - upper posterior part.



## Cranium - 8 bones.

face - 14 bones.

- 1 occipital
- 1 frontal
- 2 parietal
- 2 temporal
- 1 sphenoid
- 1 ethmoid

Frontal - front of cranium.

front - forehead - vertical.

horizontal - upper walls of eye socket.

- 2 frontal eminences.
- 2 superciliary ridges - eyebrows.
- 2 frontal sinuses.
- orbital - horizontal.

Parietal - quadrilateral part 
<sup>Parietal</sup>  
 $\left\{ \begin{array}{c} \text{orbital} \\ \text{ethmoid} \end{array} \right\}$   
<sup>occipital</sup>
  
 - grooved for arteries.

Occipital - basal part lies horizontal + forms part of base of cranium.

- 1) - lateral portion - supports 2 condyles for articulation with atlas.
- 2) - Foramen magnum - for arteries, medulla oblongata, for spinal accessory nerve.
- broad part called spina.
- 3) - 4 ridges - 2 superior nuchal lines  
 - etc. - sterno - cleido - mastoid trapezius.  
 - 2 inferior nuchal lines  
 deeper smaller neck muscles.





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